

ABSTRACT OF THE DISCLOSURE

A channel encoding system and a channel decoding system for use in transmitting multiple high definition television programs in a single satellite channel. The channel encoding system may comprise a frame formatter that may be configured to format a transport stream to produce a block stream. An error correction encoder may be configured to encode the block stream to produce an error protected block stream. An interleave module may be configured to interleave the error protected block stream to produce a data stream. A turbo encoder may be configured to encode the data stream to produce an encoded stream. A bit-to-symbol mapper may be configured to map the encoded stream to produce a symbol stream capable of at least eight different symbols. Finally, a modulator may be configured to modulate the symbol stream.